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| **Unit Title:** Adding and Subtracting Fractions with Unlike Denominators | **Pacing (Duration of Unit):** 4 Weeks |

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| **Desired Results** |

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| **Transfer Goals (**Priority practice standards in **bold)** |
| *Students will be able to independently use their learning to:*  MP.1. Make sense of problems and persevere in solving them.  MP.2. **Reason abstractly and quantitatively.**  MP.3. Construct viable arguments and critique the reasoning of others.  MP.4. **Model with mathematics.**  MP.5. **Use appropriate tools strategically.**  MP.6. **Attend to precision.**  MP.7**.** Look for and make use of structure.  MP.8. Look for and express regularity in repeated reasoning. |

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| **Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)** |

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| **Prerequisite Standards:**   * 4.NF.3. Understand a fraction ***a***/***b*** with *a* > 1 as a sum of fractions **1**/***b***.   + 4.NF.3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.   + 4.NF.3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.   + *Examples:* ***3****/****8*** *=* ***1****/****8*** *+* ***1****/****8*** *+* ***1****/****8****;* ***3****/****8*** *=* ***1****/****8*** *+* ***2****/****8****; 2\_****1****/****8*** *= 1 + 1 +* ***1****/****8*** *=* ***8****/****8*** *+* ***8****/****8*** *+* ***1****/****8****.*   + 4.NF.3c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.   + 4.NF.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem. | **WIDA for English Language Learners**  Standard 1: ELLs **communicate** for **Social** and **Instructional** purposes within the school setting  Standard 3: ELLs **communicate** information, ideas and concepts necessary for academic success in the content area of **Mathematics** |
| **Standards** (Priority Standards in **bold**):   * **5.NF.1: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12.* (In general, *a*/*b* + *c*/*d* = (*ad* + *bc*)/*bd*.)** * 5.NF.2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result* ***2****/****5*** *+* ***1****/****2*** *=* ***3****/****7****, by observing that* ***3****/****7*** *<* ***1****/****2****.* | In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) this curriculum map, 2.) a list of their ELLs and their proficiency levels, and 3.) appropriate language function expectations and scaffolds or supports. |

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| **Meaning (\*Mostly assessed through Performance Tasks/Assessments)** |

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| **Big Ideas:** (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)   * Fractions sometimes represent part-to-whole relationships * Fractions cannot be added or subtracted unless both fractions are expressed as a reflection of the same whole (common denominators) * There are a variety of strategies to solve real world problems involving fractions | **Essential Questions:** (Questions which frame ongoing and important inquires about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)   * How are equivalent fractions helpful when solving problems? * How can a model be used to solve a problem with fractions? * In what situations would we want to add or subtract fractions? |

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| **Acquisition (\*Mostly assessed through traditional summative assessments)** | |
| **Knowledge:** Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.  ***Students will know…***   * That common denominators are needed in order to add or subtract fractions * Estimation a tool for assessing reasonableness of answers * Equivalent fractions are fractions with different numbers that represent the same value   **Key Academic Vocabulary:**   * Common Denominator * Unlike Denominator * Like Denominator * Mixed Number * Improper Fraction * Equivalent Fraction * Simplest Form * Unit Fraction * Benchmark Fraction | **Skills:** The discrete skills and process students should be able to use independently  *Students will be skilled at:*   * Converting between mixed and improper fractions for the purpose of adding and subtracting fractions. * Formulating equivalent fractions in order to add and subtract fractions with unlike denominators. * Selecting and Using appropriate visual fraction models to represent addition and subtraction problems. * Estimating sums and differences using benchmark fractions. * Simplifying sums and differences to lowest terms. |

**Resource Suggestions:**

Free App: “Fractions” – Understanding/working with

Matching equivalent fractions<http://pbskids.org/cyberchase/math-games/melvins-make-match/>

**Interactive Games** [**http://interactivesites.weebly.com/math.html**](http://interactivesites.weebly.com/math.html) *(Click on unit topic)*

**Common Core Georgia Performance Standards:** Add & Subtract Fractions

**Illustrative math** <http://www.illustrativemathematics.org/5>

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| Standard(s) | [Link](http://www.illustrativemathematics.org/5) |
| 5.NF.1 | [5.NF Egyptian Fractions](http://www.illustrativemathematics.org/illustrations/839)  [5.NF Mixed Numbers with Unlike Denominators](http://www.illustrativemathematics.org/illustrations/847)  [5.NF Finding Common Denominators to Add](http://www.illustrativemathematics.org/illustrations/848)  [5.NF Jog-A-Thon](http://www.illustrativemathematics.org/illustrations/855)  [5.NF Finding Common Denominators to Subtract](http://www.illustrativemathematics.org/illustrations/859)  [5.NF Making S'Mores](http://www.illustrativemathematics.org/illustrations/861)  [5.NF Fractions on a Line Plot](http://www.illustrativemathematics.org/illustrations/1563) |
| 5.NF.2 | [5.NF Do These Add Up?](http://www.illustrativemathematics.org/illustrations/481) [5.NF Salad Dressing](http://www.illustrativemathematics.org/illustrations/1172) |

**K-5 Math Resources** <http://www.k-5mathteachingresources.com/5th-grade-number-activities.html>

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| Standard(s) | [Link](http://www.k-5mathteachingresources.com/5th-grade-number-activities.html) |
| 5.NF.1 | [Creating Equiv. Fractions to Add Unlike Fractions](http://www.k-5mathteachingresources.com/support-files/creating-equivalent-fractions-to-add-unlike-fractions.pdf)  [Creating Equiv. Fractions to Subtract Unlike Fractions](http://www.k-5mathteachingresources.com/support-files/creating-equivalent-fractions-to-subtract-unlike-fractions.pdf)  [Fraction Word Problems (unlike denominator)](http://www.k-5mathteachingresources.com/support-files/fraction-word-problems-unlike-denominator.pdf)  [Adding Mixed Numbers with Unlike Denominators](http://www.k-5mathteachingresources.com/support-files/adding-mixed-numbers-with-unlike-denominators.pdf)  [Subtracting Mixed Numbers with Unlike Denominators](http://www.k-5mathteachingresources.com/support-files/subtracting-mixed-numbers-with-unlike-denominators.pdf)  [Closest to 25](http://www.k-5mathteachingresources.com/support-files/closest-to-25.pdf)  [Magic Squares (adding fractions)](http://www.k-5mathteachingresources.com/support-files/magicsquaresadditionfractions.pdf)  [Mixed Number Sum](http://www.k-5mathteachingresources.com/support-files/mixednumberswithsumof5nf1.pdf)  [Mixed Number Difference](http://www.k-5mathteachingresources.com/support-files/mixednumberswithdifference5nf1.pdf) |
| 5.NF.2 | [Addition Word Problems with Fractions](http://www.k-5mathteachingresources.com/support-files/fractionwordproblem1.pdf)  [Subtraction Word Problems with Fractions](http://www.k-5mathteachingresources.com/support-files/fractionwordproblem2.pdf) |

**Technology (videos)**

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| **Standards** | **Link** |
| 5.NF.1 | [Virtual Manipulative (Illuminations): Equivalent Fractions](http://illuminations.nctm.org/ActivityDetail.aspx?ID=80)  [Virtual Manipulative: Balancing Fractions](http://www.mathplayground.com/Scale_Fractions.html)  [Virtual Manipulative: Equivalent Fractions](http://www.mathplayground.com/visual_fractions.html) |
| 5.NF.2 | [Virtual Manipulative (NLVM): Adding Fractions](http://nlvm.usu.edu/en/nav/frames_asid_106_g_3_t_1.html?from=category_g_3_t_1.html)  [Online Assessment: Adding and Subtracting Fractions](http://www.glencoe.com/sec/math/studytools/cgi-bin/msgQuiz.php4?isbn=0-07-829631-5&chapter=6&lesson=3&headerFile=4&state=na)  [Online Tutorial: Adding and Subtracting Fractions with Unlike Denominators](http://www.active-maths.co.uk/fractions/whiteboard/frac_index.html)  [Online Assessment: Adding and Subtracting Fractions with Unlike Denominators](http://www.glencoe.com/sec/math/studytools/cgi-bin/msgQuiz.php4?isbn=0-07-829631-5&chapter=6&lesson=4&headerFile=4&state=na)  [Scholastic Study Jam: Adding and Subtracting Mixed Numbers](http://studyjams.scholastic.com/studyjams/jams/math/fractions/add-sub-mixed-numbers.htm)  [Online Game: Fraction & Decimal Jeopardy (Quia)](http://www.quia.com/cb/95580.html) |
| 5.NF.1 | <http://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-fractions-topic/cc-5th-add-sub-fractions> |
| 5.NF.2 | <http://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-fractions-topic/cc-5th-addsub-frac-word-problems> |

**GO MATH**

**STANDARDS: 5NF1**; 5NF2

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| **STANDARDS** | **LESSON #** | **LESSON TITLE** |
| 5NF2 | 6.1 | Investigate - Addition with Unlike Denominators |
| 5NF2 | 6.2 | Investigate - Subtraction with Unlike Denominators |
| 5NF2 | 6.3 | Estimate Fraction Sums & Differences |
| **5NF1** | **6.4** | **Common Denominators & equivalent Fractions** |
| **5NF1** | **6.5** | **Add & Subtract Fractions** |
| **5NF1** | **6.6** | **Add & Subtract Mixed Numbers** |
| **5NF1** | **6.7** | **Subtracting with Renaming** |
| **5NF1** | **6.8** | **Algebra - Patterns with Fractions** |
| 5NF2 | 6.9 | Problem Solving - Practice Addition & Subtraction |
| **5NF1** | **6.10** | **Algebra - Use Properties of Addition** |